

### **Abstract**

As an output amplifier of a frequency converter circuit, a push-pull amplifier that allows operating with a small consumption current and providing a high gain is used. Further, the push-pull amplifier is  
5 configured to have a voltage drop circuit to lower the collector potential of the upper transistor to the level lower than the potential of the power supply. The voltage drop circuit is configured to have, for example, a resistor inserted between the collector of the upper transistor and the power supply.